

DVS 605

FIVE INPUT HDCP-COMPLIANT
SCALER WITH SEAMLESS SWITCHING

Advanced, High Performance
Switching and Scaling for HDMI and
Analog Video

- ▶ Integrates HDMI, RGB, HDTV, and video sources into presentation systems
- ▶ Three HDMI inputs and two universal auto-detecting analog video inputs
- ▶ Simultaneous outputs for HDMI and analog RGB or HD component video
- ▶ True seamless switching
- ▶ PIP – picture-in-picture
- ▶ Auto-switching between inputs



Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

Introduction

The Extron **DVS 605** is a high performance video scaler that includes three HDMI inputs, two universal analog video inputs, and simultaneous HDMI and analog high resolution outputs. The DVS 605 accepts a wide variety of video formats including HDMI with HDCP, HDTV, RGB, and standard definition video. It features advanced Extron video signal processing with 1080i deinterlacing, Deep Color processing, and true seamless switching for professional-quality presentations. Designed for professional AV integration, the DVS 605 offers flexible control options including Ethernet, RS-232, USB, and contact closure. The DVS 605 is available in models with audio switching plus HDMI audio embedding / de-embedding, and also 3G/HD-SDI output with genlock.

Five Input Multi-Format Video Switcher

To accommodate a variety of sources, the DVS 605 features three HDMI inputs plus two universal analog video inputs that can automatically detect and process RGB computer-video, HDTV, component video, S-video, and composite video. The DVS 605 provides the capability to integrate digital and analog video devices, with HDCP compliance to enable integration of Blu-ray Disc players and cable or satellite HD receivers. Auto-switching between inputs streamlines system operation as well as integration with presentation switchers or matrix switchers.

EDID Minder® and Key Minder®

To enhance and simplify integration of sources and displays, the DVS 605 Series features two exclusive Extron technologies: EDID Minder and Key Minder. EDID Minder automatically manages

EDID communications between the display device and all the HDMI and VGA computer-video input sources. For HDMI signals with protected content, Key Minder continuously authenticates HDCP-compliant input and output devices to ensure quick and reliable switching in professional AV environments. When receiving an HDCP-encrypted HDMI input source, the DVS 605 outputs a full-screen green signal on any video output connected to a non-HDCP compliant display. This provides immediate visual confirmation that the protected content cannot be viewed on this display.

High Performance Video Processing

The DVS 605 features an advanced, high performance 30-bit scaling engine with the ability to scale HDMI, RGB, HDTV, and standard definition video signals up or down in resolution. This advanced video processor also features high performance deinterlacing of 1080i and standard definition video to deliver optimal image quality through advanced motion compensation.

The DVS 605 accepts and outputs signals up to 1920x1200 including HDTV 1080p/60 and 2048x1080. It provides simultaneous outputs for HDMI and analog RGB or HD component video. An additional 3G/HD-SDI output with genlock is also available.

Create Professional Quality Presentations with Seamless Switching and Picture-in-Picture

The advanced video processing in the DVS 605 enables high quality, professional presentations with true seamless switching between Inputs 1 to 4 with selectable cut or dissolve transitions. The DVS 605 also features a flexible PIP picture-in-picture mode that allows any two video sources connected to Inputs 1 to 4 to be shown on one display.

Audio Switching Models Available

All DVS 605 models provide automatic lip sync compensation for video processing delay. The DVS 605 A and DVS 605 AD feature five input audio switching to accompany incoming video sources. Gain and attenuation can be adjusted for each analog input. Audio outputs include fixed and variable balanced/unbalanced on captive screw connectors, as well as S/PDIF on coaxial RCA.

DVS 605 models with audio switching feature HDMI audio embedding and de-embedding. Any analog input audio signal can be embedded onto the HDMI output. DVS 605 audio models can also extract embedded HDMI audio to analog and digital S/PDIF outputs. The DVS 605 AD, with audio switching plus 3G/HD-SDI output can embed up to eight channels of audio onto the SDI output.



Features

Three HDMI inputs and two universal auto-detecting analog video inputs

The DVS 605 allows for switching between HDMI and analog video sources. Two analog universal video inputs automatically detect incoming RGB, HD/SD component video, S-video, or composite video signals.

Simultaneous outputs for HDMI and analog RGB or HD component video

True seamless switching

Seamless cut and dissolve transition effects are available for Inputs 1 to 4 to enhance and deliver professional quality presentations. Input 5 features glitch-free switching with a fade to black.

Picture-in-picture

For Inputs 1 to 4, the DVS 605 provides the flexibility to allow unrestricted two-window display of standard definition and high resolution digital and analog video sources. Several PIP presets are available, including side-by-side windows. The main and PIP windows can be dynamically sized, positioned, and magnified. In DVS 605 audio models, audio switching can be set to follow either the main or PIP window.

Auto-switching between inputs

Auto-switching allows for simple, unmanaged installation in locations such as in a podium or under a conference table. When multiple inputs are active, the switching priority is configurable.

Auto Input Format Detection

For the universal analog video inputs, the DVS 605 detects the incoming signal format, automatically reconfiguring itself to provide the appropriate decoding and signal processing.

Selectable output rates

Available output rates include computer-video up to 1920x1200, HDTV rates up to 1080p/60, and 2048x1080.

Advanced scaling engine with 30-bit processing and 1080i deinterlacing

Image scaling and video format conversion are performed at 30-bit precision for enhanced color accuracy and picture detail. High performance deinterlacing for 1080i signals from HD sources delivers optimized image quality.

HDCP compliant

The DVS 605 fully supports HDCP-encrypted sources, with selectable authorization for unencrypted content.

Supported HDMI specification features include data rates up to 6.75 Gbps, Deep Color, and HD lossless audio formats

Key Minder

Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.

EDID Minder

Automatically manages EDID communication between connected devices. EDID Minder ensures that all sources power up properly and reliably output content for display.

SpeedSwitch™ Technology

The DVS 605 provides exceptional switching speed for HDCP-encrypted content.

Aspect ratio control

The aspect ratio of the video output can be controlled by selecting a FILL mode, which provides a full screen output, or a FOLLOW mode, which preserves the original aspect ratio of the input signal.

HDCP Visual Confirmation

When processing HDCP-encrypted content, the scaler outputs a full-screen green signal on any video output connected to a non-HDCP compliant display. This provides immediate visual confirmation that protected content cannot be viewed on this display.

AFL™ - Accu-RATE Frame Lock

A patented technology exclusive to Extron that locks the output frame rate to a designated input to eliminate stuttering caused by frame rate conversion.

Output Standby Mode

The DVS 605 can be set to automatically mute video and sync output to the display device when no active input signal is detected. This allows the projector or flat-panel display to automatically enter into standby mode to save energy and enhance lamp or panel life.

Power Save Mode

The DVS 605 can be placed in a low power standby state to conserve energy when not in use.

Quad standard, 3D composite video decoding

A temporal, 3D adaptive comb filter provides advanced decoding of composite NTSC 3.58, NTSC 4.43, PAL, and SECAM for integration into systems worldwide.

Internal test patterns for calibration and setup

Audio switching

The DVS 605 A and DVS 605 AD feature audio switching for five stereo balanced or unbalanced input sources.

Output volume control

DVS 605 audio models provide volume control for the variable audio output. Both fixed and variable line level outputs are available, and each output can be balanced or unbalanced. Stereo input signals can be output as dual mono. DVS 605 audio models also include a S/PDIF digital audio output.

HDMI audio embedding and de-embedding

For DVS 605 models with audio, analog input audio signals can be embedded onto the HDMI output signals. The DVS 605 can also extract embedded HDMI audio signals, including two-channel PCM or encoded bitstream audio for Dolby® Digital or DTS® Digital Surround.

Optional 3G/HD-SDI output with genlock

The DVS 605 is available with a 3G/HD-SDI output that complies with SMPTE 292M and 424M, and ITU digital video standards.

Built-in Web server

Enables the use of a standard browser for full control and troubleshooting over a LAN, WAN, or the Internet. An intuitive Web interface is included for full configuration of the scaler.

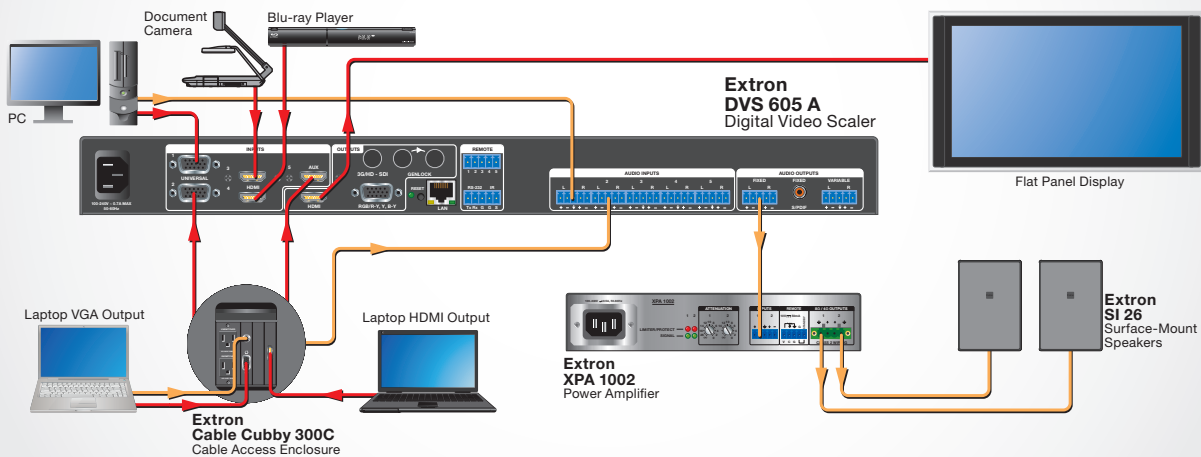
Ethernet, RS-232, USB, and contact closure control

The DVS 605 provides multiple control and monitoring options in addition to the front panel.

Applications

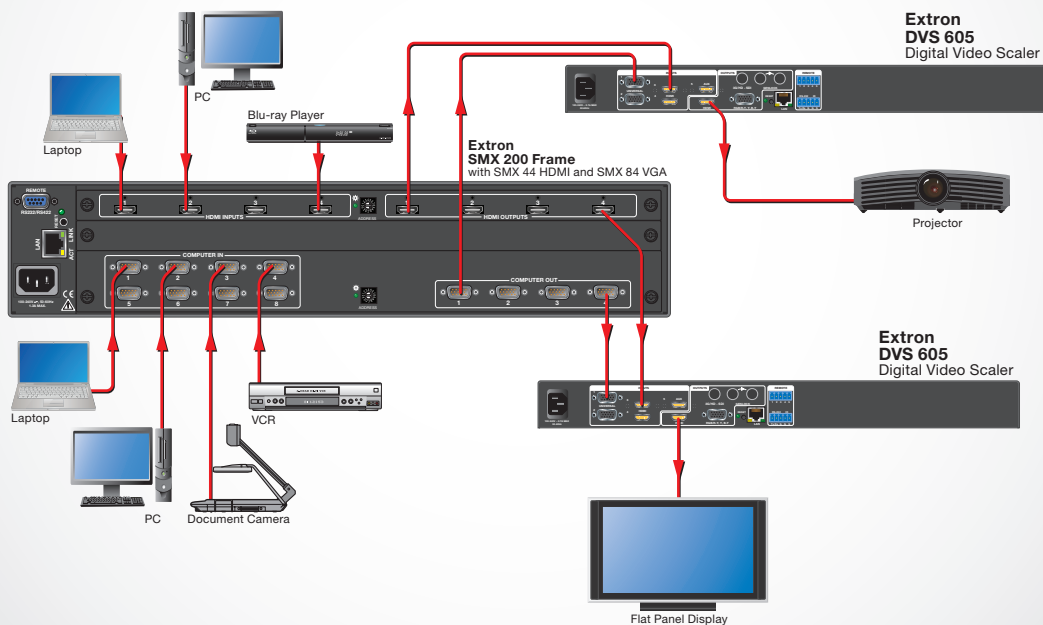
A COMPLETE AV SOLUTION

The DVS 605 is designed with the latest Extron scaling technology, together with automatic input switching, Key Minder, and EDID Minder to deliver optimum picture quality and simple, dependable operation. DVS 605 models with audio switching combine powerful video processing with feature-rich audio processing. Audio breakaway, digital and analog audio outputs, and HDMI audio embedding and de-embedding facilitate a wide range of sound playback applications.



SEAMLESS INTEGRATION WITH MATRIX SWITCHING SYSTEMS

The DVS 605 incorporates special features that simplify integration and operation with Extron matrix switchers. EDID Minder for both analog and digital video ensures reliable delivery of signal formats from all sources. Dual universal, auto-detecting analog video inputs minimize cabling and simplify system setup. The DVS 605 includes 128 input presets and auto-input memory presets to store and recall scaler settings for consistent image display.



Overview

True seamless switching

Selectable cut or dissolve transitions between HDMI and analog video sources.

Auto-Image™ setup

Quickly set up new sources such as presentation laptops with a touch of a button.

Advanced RGB and video scaling

High quality graphics and video upscaling and downscaling, 1080i deinterlacing, and HDMI Deep Color processing.



DVS 605 D - Front

SpeedSwitch™

Enables exceptional switching speed for HDCP-encrypted content.

Picture-in-picture

Allows unrestricted two-window display of standard definition and high resolution digital and analog video sources.

User-friendly interface

An intuitive LCD interface, direct access buttons, and precise rotary controls simplify system setup and operation.

HDMI, high resolution analog, and optional 3G/HD-SDI outputs

Selectable output rates are available up to 1920x1200, including HDTV 1080p and 2048x1080.



DVS 605 D - Back

Two universal auto-detecting analog video inputs

The DVS 605 accepts and automatically detects between a wide variety of video formats including RGB, HDTV, S-video, and composite video.

Three HDMI inputs

The HDCP-compliant HDMI inputs support data rates up to 6.75 Gbps, Deep Color, Lip Sync, and HD lossless audio formats.

Ethernet, RS-232 serial, wired IR, and contact closure control

Several convenient options are available for remote control and monitoring.

AUDIO SWITCHING MODELS

HDMI audio embedding and de-embedding

Embed analog input audio signals onto the HDMI output, and extract embedded audio signals from HDMI inputs.

Five input audio switcher

Balanced and unbalanced audio switching to accompany the video input sources.



DVS 605 AD - Back

S/PDIF digital audio output

Send PCM or encoded bitstream multi-channel audio to a surround sound processor.

Fixed and variable line outputs

Each output can be set for balanced or unbalanced, as well as stereo or dual mono. The variable line output allows for direct connection to a power amplifier.

Specifications

VIDEO INPUT

Number/signal type	2 RGBHV, RGBS, RGsB, RGBcvs, component video (YUVi or YUVp/HDTV), S-video, composite video 3 HDMI digital video (HDCP compliant)
Connectors	2 female 15-pin HD: RGB, component video, S-video, composite video 3 female HDMI type A: HDMI
Resolution range	640x480 to 1920x1200*, 480p, 576p, 720p, 1080i, 1080p, 2048x1080 sampled pixel for pixel *reduced blanking

VIDEO PROCESSING

Analog sampling	12 bits per color; 13.5 MHz standard (video) 170 MHz standard (RGB)
Digital pixel data bit depth	8, 10, or 12 bits per channel; 3 channels for HDMI

VIDEO OUTPUT

Number/signal type DVS 605, DVS 605 A	1 scaled RGBHV, RGBS, RGsB, or component video (YUVp/HDTV) 1 HDMI digital video (HDCP compliant)
DVS 605 D, DVS 605 AD	1 scaled RGBHV, RGBS, RGsB, or component video (YUVp/HDTV) 1 HDMI digital video (HDCP compliant) (1) 3G-SDI or HD-SDI with genlock and loop through
Connectors DVS 605, DVS 605 A	1 female 15-pin HD: RGB or component video 1 female HDMI: HDMI
DVS 605 D, DVS 605 AD	1 female 15-pin HD: RGB or component video 1 female HDMI: HDMI 3 female BNC: (1) 3G-SDI and HD-SDI, 1 genlock, and 1 genlock loop-through
Scaled resolution	640x480 ^{8,9} , 800x600 ^{8,9} , 852x480 ^{8,9} , 1024x768 ^{8,9} , 1024x852 ^{8,9} , 1024x1024 ^{8,9} , 1280x768 ^{8,9} , 1280x800 ^{8,9} , 1280x1024 ^{8,9} , 1360x768 ^{8,9} , 1365x768 ^{8,9} , 1365x1024 ^{8,9} , 1366x768 ^{1,2,3} , 1400x1050 ^{8,9} , 1440x900 ^{8,9} , 1600x900 ^{8,9} , 1600x1200 ^{8,9} , 1680x1050 ^{8,9} , 1920x1200 ^{8,9} HDTV 480p ^{7,8} , 576p ^{7,8} , 720p ^{3,4,5,6,7,8} , 1080i ^{6,7,8} , 1080p ^{1,2,3,4,5,6,7,8} , 2048x1080 ^{1,2,3,4,5,6,7,8} ¹ = at 23.98 Hz, ² = at 24 Hz, ³ = at 25 Hz, ⁴ = at 29.97 Hz, ⁵ = 30 Hz, ⁶ = at 50 Hz, ⁷ = at 59.94 Hz, ⁸ = at 60 Hz, ⁹ = at 75 Hz

AUDIO — DVS 605 A, DVS 605 AD

Frequency response	Lineout: 20 Hz to 20 kHz, ±0.05 dB
THD + Noise	Preamp: <0.110% @ 1 kHz, 20 kHz bandwidth, at maximum output level Lineout: <0.025% @ 1 kHz, 20 kHz bandwidth, at maximum output level
S/N at maximum power output (unweighted)	Preamp: 90 dB at rated maximum output Lineout: 90 dB at rated maximum output

AUDIO INPUT — DVS 605 A, DVS 605 AD

Number/signal type	5 stereo, balanced/unbalanced 3 stereo, de-embedded from HDMI (2-channel, PCM only)
Connectors	(5) 3.5 mm captive screw connector, 5 pole 3 female HDMI type A

AUDIO OUTPUT — DVS 605 A, DVS 605 AD

Number/signal type	Stereo/mono, balanced/unbalanced
Fixed output	1 analog 1 S/PDIF digital audio 1 HDMI embedded 1 optional 3G-SDI or HD-SDI embedded
Variable output	1 analog
Connectors	(2) 3.5 mm captive screw connectors, 5 pole 1 female RCA (S/PDIF) 1 female HDMI type A (shared with HDMI video) 1 optional female BNC (shared with 3G-SDI or HD-SDI video)

CONTROL/REMOTE — SCALER

Serial control port	1 bidirectional RS-232: 1 rear panel 3.5 mm captive screw connector, 5 pole (uses 3 poles)
USB control ports	1 front panel female mini USB B
Ethernet control port	1 female RJ-45 connector
Contact closure	1 rear panel 3.5 mm captive screw connector, 5 pole

GENERAL

Power supply	Internal Input: 100-240 VAC, 50-60 Hz
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Fan, air flows from left to right (as viewed from front panel)
Mounting	
Rack mount	Yes, with included brackets
Enclosure dimensions	1.75" H x 17.5" W x 10.5" D (1U high, full rack wide) (4.4 cm H x 44.4 cm W x 26.7 cm D) (Depth excludes connectors and knobs. Width excludes rack ears.)
Shipping weight	11 lbs (5 kg)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
MTBF	30,000 hours
Warranty	3 years parts and labor
NOTE: All nominal levels are at ±10%.	

Model	Version Description	Part number
DVS 605	Standard Version	60-1059-01
DVS 605 A	With Audio Switching	60-1059-02
DVS 605 D	With 3G/HD-SDI Output	60-1059-03
DVS 605 AD	With 3G/HD-SDI Out and Audio Switching	60-1059-04

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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